

16-20009-103  
November 1990

**Bally**™

# **BUGS BUNNY'S BIRTHDAY BALL**

## **Operator's Handbook**

*presenting:*

Game Audits  
Game Adjustments  
Solenoids/Flashers & Locations  
Game Switches & Locations  
Game Lamps & Locations  
Playfield Parts & Locations

Midway Manufacturing Company  
3401 N. California Ave.  
Chicago, IL 60618

## Bugs Bunny's Birthday Ball Audit Table

Audit Item (Lower)	Descriptive Phrase (Upper Display)	Audit Item Value (Lower Display)
AU 01	LEFT COINS (chute next to coin door hinge)	432
02	CENTER COINS	0
03	RIGHT COINS	398
04	PAID CREDITS	830
05	TOTAL PLAYS	
06	TOTAL FREE (Total Free Plays)	
07	PERCENT FREE (% Free Plays)	
08	REPLAY AWARDS	
09	PERCENT REPLAY (% Replay Awards)	
10	SPECIAL AWARDS	
11	PERCENT SPECIAL (% Special Awards)	
12	MATCH AWARDS	
13	HSTD (High Score to Date) CREDITS	
14	PERCENT HSTD (% HSTD Credits)	
15	EXTRA BALLS	
16	PERCENT EX. BALL (% Extra Balls)	
17	AV. BALL TIME (Average Time In Seconds)	
18	MINUTES OF PLAY (Minutes of Play)	
19	BALLS PLAYED	
20	REPLAY1 AWARDS	
21	REPLAY2 AWARDS	
22	REPLAY3 AWARDS	
23	REPLAY4 AWARDS	
24	1 PLAYER GAMES	
25	2 PLAYER GAMES	
26	3 PLAYER GAMES	
27	4 PLAYER GAMES	
28	BURN IN CYCLES	
29	MADE LOONEY TUNES	
30	MADE LT MILLION	
31	MADE 50 MILLION	
32	MADE 500K SKILL SHOT	
33	MADE 500K CAPTIVE BALL SHOT	
34	MADE CAPTIVE BALL SHOT	
35	Not Used	
36	TWEETY BONUS	
37	MADE SHOPPING SPREE	
38	MADE SHOPPING SPREE EXTRA BALL	
39	H.S.RESET COUNTER	
40	0.0-0.4 MIL. SCORE (# of games <500K)	
41	0.5-0.9 MIL. SCORE (# of games ≥500K, <1M)	
42	1.0-1.4 MIL. SCORE (# of games ≥1M, <1.5M)	
43	1.5-1.9 MIL. SCORE (# of games ≥1.5M, <2.0M)	
44	2.0-2.9 MIL. SCORE (# of games ≥2.0M, <3.0M)	
45	3.0-3.9 MIL. SCORE (# of games ≥3.0M, <4.0M)	
46	4.0-4.9 MIL. SCORE (# of games ≥4.0M, <5.0M)	
47	5.0-5.9 MIL. SCORE (# of games ≥5.0M, <6.0M)	
48	6.0-6.9 MIL. SCORE (# of games ≥6.0M, <7.0M)	
49	7.0-7.9 MIL. SCORE (# of games ≥7.0M, <8.0M)	
50	8.0-99.9 MIL. SCORE (# of games ≥8.0M, <100M)	
51	AV. MIN. GAME TIME (Average Game In Minutes)	
52	LEFT DRAINS (# of drains via Left Outlane)	
53	RIGHT DRAINS (# of drains via Right Outlane)	
NOTE:1. The numbers shown in this column for items 1 through 4 are examples. Entries for all items depend on the amount of play; thus, they will vary from location to location.		

## Bugs Bunny's Birthday Ball Game Adjustment Table

Adjustment Item (Lower)	Descriptive Phrase (Upper Display)	Factory Setting 6 (Lower)		
		Domestic (US/Can.)	French	W. Ger/ European
Ad 01	AUTO REPLAY <sup>1</sup> or	10 (%)		
02	FIXED REPLAY <sup>1</sup>	SCORES		
03	REPLAY START (or REPLAY LEVEL 1) <sup>1</sup>	6,000,000	6,000,000	7,000,000
04	REPLAY LEVELS (or REPLAY LEVEL 2) <sup>1</sup>	01 (or OFF)		02
05	(REPLAY LEVEL 3) <sup>1</sup>	(see text)		
06	(REPLAY LEVEL 4) <sup>1</sup>	(see text)		
07	REPLAY AWARD	Credit		
08	SPECIAL AWARD	Credit		
09	MATCH FEATURE	0	0	0
10	BALLS / GAME	03		
11	TILT WARNING	03	01	
12	EX. BALL / GAME	04		
13	MAXIMUM CREDITS	10	20	30
14	HIGHEST SCORES	On		
15	BACKUP HI. SCR. 1	8,000,000	8,000,000	9,500,000
16	BACKUP HI. SCR. 2	7,500,000	7,500,000	8,000,000
17	BACKUP HI. SCR. 3	7,000,000	7,000,000	8,500,000
18	BACKUP HI. SCR. 4	7,500,000	8,500,000	8,000,000
19	HI. SCR. 1 CREDITS	01	03	03
20	HI. SCR. 2 CREDITS	01	01	00
21	HI. SCR. 3 CREDITS	01	01	00
22	HI. SCR. 4 CREDITS	01	01	00
23	H. S. RESET EVERY	3,000		750
24	FREE PLAY	NO		
25	U.S.A. 2 COINAGE (4 COINS 3 PLAYS) <sup>2,3,4</sup>	USA 2	French 1	German 2
26	LEFT UNITS	03	02	06
27	CENTER UNITS	12	10	12
28	RIGHT UNITS	03	20	30
29	UNITS/ CREDIT	04	05	05
30	UNITS/ BONUS	00	20	00
31 - 58	MINIMUM UNITS	00	00	00
Game-specific Play / Coinage Adjustments (detailed in text, the Game-specific Adjustments Setting Table, and the Difficulty Setting Comparison Table)				
59 <sup>5</sup>	INSTALL ADDABALL	NO		
60 <sup>5</sup>	INSTALL 5-BALL	NO		
61 <sup>5</sup>	INSTALL NOVELTY	NO		
62 <sup>5</sup>	INSTALL EX. EASY	NO		
63 <sup>5</sup>	INSTALL EASY	NO		
64 <sup>5</sup>	INSTALL MEDIUM	NO		
65 <sup>5</sup>	INSTALL HARD	NO		
66 <sup>5</sup>	INSTALL EX. HARD	NO		
67	AUTO BURN-IN	NO		
68	INSTALL FACTORY	NO		
69	CLEAR AUDITS	NO		
70	CLEAR COINS	NO		

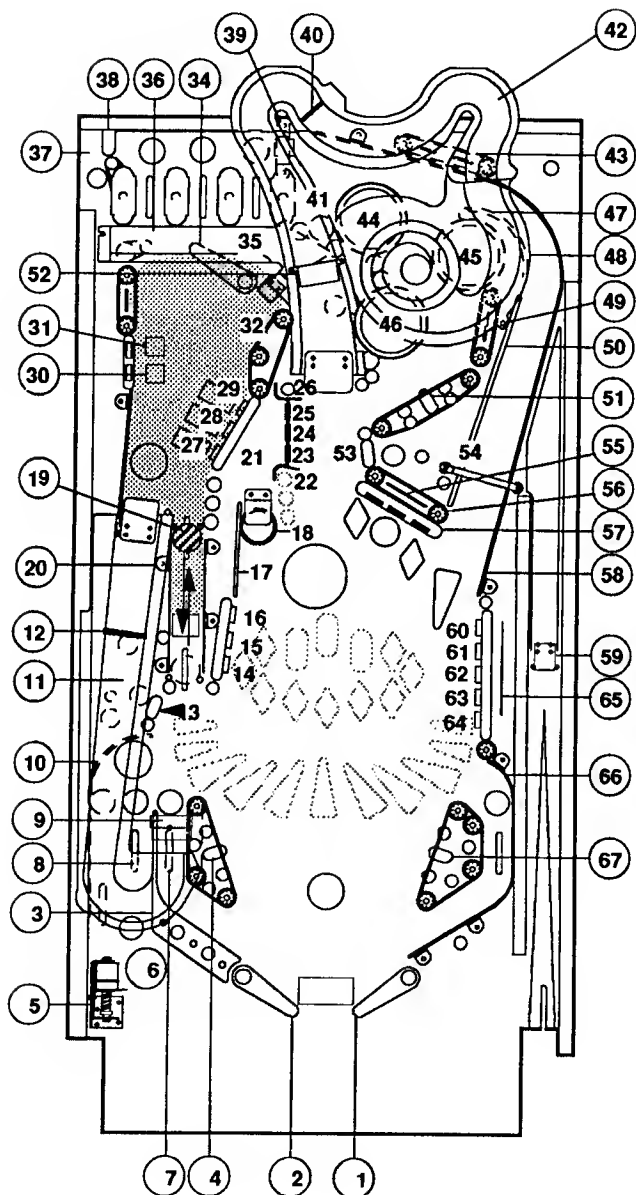
### NOTES:

- Automatic Replay percentage value range is adjustable from 5 to 25%, via the Credit Button. Item 02 permits changing the factory setting value for Replay Start Level (valid for next 50 games played). Item 03 permits setting up to four replay levels, with values as detailed in text describing Item 03. For Fixed Replay Scores, set Auto Replay value to 1 less than 5(%) via the Credit Button. Go to items 02, 03, 04, and 05; install their replay level scores. Turn off any replay level by setting 00 as its value.
- Phrase in parentheses is Factory Setting. Phrase appears in player displays. Press Credit Button to change setting of the game pricing of Item 24.
- To change country OR coinage setting, press Credit button to obtain 24 Standard Settings, followed by a Custom Setting. The Custom Setting activates items 25 through 30. When a Standard Setting is used, items 25 through 30 are set automatically, and cannot be changed.
- Refer to Pricing Table and text describing these items.
- Special Preset Adjustment, whose effects are noted in the Game Adjustment text.
- Entries in Factory Setting columns for French and W. German games show only differences from entries in first (US / Can.) column.

## Bugs Bunny's Birthday Ball Playfield Parts

Item	Part Number	Description	Item	Part Number	Description
1	C-13174-R	Right Flipper Assembly	49	02-4327-13	Standoff, 4"
2	C-13174-L	Left Flipper Assembly	50	12-6956	Wire Ball Guide
3	A-14230	Flipper Ball Guide Assy.	51	B-12665	Upper "Sling" Kicker
4	B-12665	Left Kicker	52	A-14158	Enter Main Ramp
5	B-11873	Bottom Arch Kicker	53	A-14229-13	Standup Target (Square)
6	12-6961	Wireform	54	B-12164-1	Spinner Target Assembly
7	12-6466-10	Wireform, 2-1/2"	55	12-6466-8	Wireform Assy., 2"
8	12-6466-12	Wireform, 3-1/2"	56	A-14277	Ball Snubber Assembly
9	A-14222	Ball Damper Assembly	57	C-11223-1	3-Bank Drop Target Assy.
10	01-9926	Ball Guide Assembly	58	A-14220	Ball Guide Assembly
11	03-8504	Left Ramp Assembly	59	A-14223	Shooter Ramp Assembly
12	A-13487	Ball Gate & Wire Assembly	60	A-14227-2	Standup Target (Round)
13	A-14229-13	Square Standup Target	61	A-14227-4	Standup Target (Round)
14	B-11742-5	Standup Target (Round)	62	A-14227-15	Standup Target (Round)
15	A-14227-6	Standup Target (Round)	63	A-14227-6	Standup Target (Round)
16	A-14227-15	Standup Target (Round)	64	B-11742-5	Standup Target (Round)
17	12-6955	Wireform, 4"	65	A-14171	Target Cover Assembly
18	B-9361-R-1	Ball Eject	66	A-14219	Ball Guide Assembly
19	20-6500	Captive Ball	67	B-12665	Right "Sling" Kicker (Lower)
20	01-9964	Ball Guide Assembly	68	Parts below are located beneath Bottom Arch:	
21	A-14172	Housing Cover Assy. (Standups)	a)	B-8623	Upper Trough Baffle Assembly
22	12-6955	Wire Ball Guide	b)	C-8235	Lower Trough Baffle Assembly
23	A-14228-4	Standup Target (Round)	c)	12-6542	Trough Baffle Wire
24	A-14228-2	Standup Target (Round)	d)	01-3569-1	Ball Trough (runway)
25	A-14228-1	Standup Target (Round)	e)	01-5575	Bottom Arch Mounting Bracket
26	A-14221	Ball Deflector Assembly	f)	B-8039-2	Outhole Kicker Assembly
27	B-11742-9	Standup Target (Round)	g)	C-8638	Shooter Lane Feeder
28	B-11742-9	Standup Target (Round)			
29	B-11742-9	Standup Target (Round)			
30	B-11742-2	Standup Target (Round)			
31	B-11742-2	Standup Target (Round)			
32	12-6466-2	Wireform			
33	01-9929	Bracket Ball Slide			
34	C-13174-L-2	Upper Left Flipper			
35	03-8503	Small Drop Ramp			
36	12-6466-6	Wireform			
37	02-4252-23	F-F Spacer			
38	A-14229-9	Standup Target (Square)			
39	A-9465-L	Ball Gate & Wire Assembly			
40	5647-12073-21	Main Ramp Score			
41	02-4322-12	Standoff, 3-1/2"			
42	03-8505	Up/Down Main Ramp Assy.			
	03-8509	Up/Down Main Ramp Assy.			
43	12-6486-3	Wireform, 3/4"			
44	C-12872	Jumper Bumper (Top Left)			
	03-8277-10	Cap			
	03-8276-9	Collar			
45	C-12872	Jumper Bumper (Top Right)			
	03-8277-16	Cap			
	03-8276-10	Collar			
48	C-12872	Jumper Bumper (Top Lower)			
	03-8277-9	Cap			
	03-8276-16	Collar			
47	12-6954	Wire Ball Guide Assembly			
48	A-14213	Up/Low Assembly			

# *Bugs Bunny's Birthday Ball* Playfield Parts Locations



# Bugs Bunny's Birthday Ball

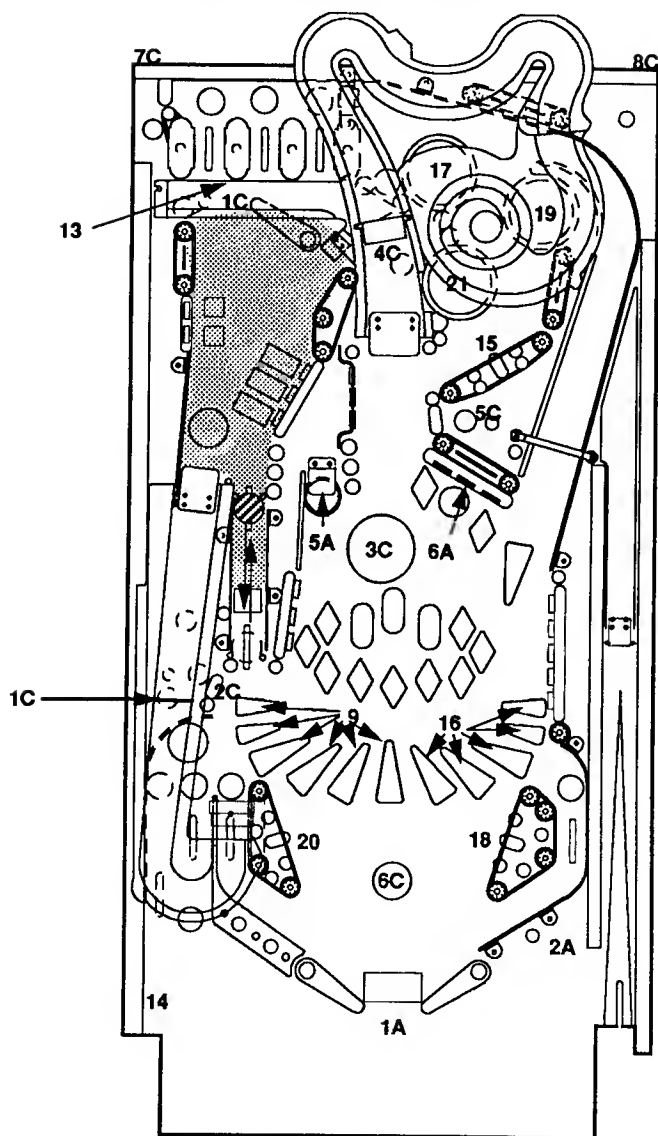
## Solenoid Matrix Table

Bugs Bunny's Birthday Ball Solenoid Table

Sol. No.	Function	Solenoid Type	Wire Color	Connections		Driver Trncts	Solenoid Part Number
				CPU Bd	Playmate Cabinet		
01A	Outsole Kicker	Switched	Vio-Brn	1P11-1	5J1-9: 5J4-9 (A)	Q33	AE-23-800
01C	Left Ramp Flash	Switched	Blk-Brn	(Gry-Brn)	5J5-9 (C)	Q33	#89/906 flashlamps 2p
02A	Shooter Lane Feeder	Switched	Vio-Red	1P11-3	5J1-7: 5J4-8 (A)	Q25	SM-26-600-DC
02C	Standup by "L" Flash	Switched	Blk-Red	(Gry-Red)	5J5-8 (C)	Q25	#89/906 flashlamps 1p, 1g
03A	Not Used	Switched	Vio-Orn	1P11-4	5J1-6: 5J4-7 (A)	Q32	AE-26-1200
03C	50 Million Flash	Switched	Blk-Orn	(Gry-Orn)	5J5-7 (C)	Q32	#89/906 flashlamps 1p, 1g
04A	Not Used	Switched	Vio-Yel	1P11-5	5J1-5: 5J4-6 (A)	Q24	AE-23-800
04C	Tazz Ramp Flash	Switched	Blk-Yel	(Gry-Yel)	5J5-5 (C)	Q24	#89/906 flashlamps 1p, 1g
05A	Eject Hole	Switched	Vio-Gm	1P11-6	5J1-4: 5J4-5 (A)	Q31	AE-23-800
05C	Standup by R Dr Tgt Flash	Switched	Blk-Gm	(Gry-Gm)	5J5-4 (C)	Q31	#89/906 flashlamps 1p, 1g
06A	R Dr Tgt Bank Reset	Switched	Vio-Blu	1P11-7	5J1-3: 5J4-4 (A)	Q23	AE-23-800
06C	Bug's Face Flash	Switched	Blk-Blu	(Gry-Blu)	5J5-3 (C)	Q23	#89/906 flashlamps 1p, 1g
07A	Knocker (in Backbox)	Switched	Vio-Blk	1P11-8	5J1-2: 5J4-2 (A)	Q30	AE-23-800
07C	Top Left Flash	Switched	Blk-Vio	(Gry-Vio)	5J5-2 (C)	Q30	#89/906 flashlamps 1p, 1g
08A	Not Used	Switched	Vio-Gry	1P11-9	5J1-1: 5J4-1 (A)	Q22	#89/906 flashlamps 1p, 1g
08C	Right Back Panel Flash	Switched	Blk-Gry	(Gry-Blk)	5J5-1 (C)	Q22	#89/906 flashlamps 1p, 1g
09	LOONEY Relay	Controlled	Bm-Blk	1P12-1	5J2-9: 5J6-9: 2J4-11	O17	5580-09555-01 4a
10	P1'd Illum Relay	Controlled	Bm-Red	1P12-2	5J2-8: 5J6-8: 2J4-11	O9	5580-09555-01 4a
11	Insert Illum Relay	Controlled	Bm-Orn	1P12-4	5J2-6: 5J6-7: 2J4-11	O18	5580-09555-01 5
12	A/C Select Relay	Controlled	Bm-Yel	1P12-5	5J2-5	O15	5580-09555-01 5
13	Ball Launcher	Controlled	Bm-Gm	1P12-6	5J2-4: 5J6-5: 2J4-13	O7	AE-23-800
14	L Outlane Kickback	Controlled	Bm-Blu	1P12-7	5J2-3: 5J6-3: 2J4-14	O14	AE-26-1200
15	Top Sling	Controlled	Bm-Vio	1P12-8	2J4-15: 2J11-2	O6	5580-09555-01 4a
16	TUNES Relay	Controlled	Bm-Gry	1P12-9	2J4-16: 2J11-1	O75	AE-23-800
17	Left Jet Bumper	Special #1	Blu-Bm	1P19-7	5J3-7: 5J7-7	O71	AE-26-1200
18	Left Kicker ("sling")	Special #2	Blu-Red	1P19-4	5J3-6: 5J7-6	O73	AE-23-800
19	Right Jet Bumper	Special #3	Blu-Orn	1P19-3	5J3-3: 5J7-3	O69	AE-26-1200
20	Right Kicker ("sling")	Special #4	Blu-Yel	1P19-6	5J3-4: 5J7-4	O77	AE-23-800
21	Lower Jet Bumper	Special #5	Blu-Gm	1P19-8	5J3-2: 5J7-2	O79	AE-23-800
22	Not Used	Special #6	Blu-Blk	1P19-9	5J3-1: 5J7-1		
	Right Flipper		Om-Vio	1P19-1	2J5-5: 2J10-7		FL11630/50VDC
	Lower Right Flipper		[Blu-Vio] <sup>2</sup> [Blk-Yel] <sup>2</sup>		[2J10-1: 2J10-15] [2J10-3: 2J10-13]		FL11630/50VD
	Left Flipper		Om-Gry	1P19-2	2J5-4: 2J10-8		C
	Lower Left Flipper		[Blu-Gm] <sup>2</sup>		[2J10-2: 2J10-14]		FL11630/50VD

NOTES: 1. Wire colors, except Flipper ORN, VIO and GRN, are ground connections (to coil terminal with unbarbed and of Gauge). Flipper ORN, VIO and GRN, GRN wires connect from CPU Board to Flipper switch on cabinet. 2. Flipper connections shown in brackets are from Flipper switch to flipper coil. 3. "A" circuits are pulsed, when Sol. 12 is de-energized; "C" circuits are pulsed, when Sol. 12 energized. Wire colors in brackets are those from respective A and C terminals corresponding to the J1-terminal connection listed for the Aux Power Driver Board, which controls the device pulsing by Sol. 12. 4. Relay is mounted on Relay Board: (4a) pin C-11890-1; (4b) pin C-11892-1. 5. Relay is mounted on Aux Power Driver Bd, D-12247, in the backbox.

# **Bugs Bunny's Birthday Ball** **Playfield Solenoid Locations**



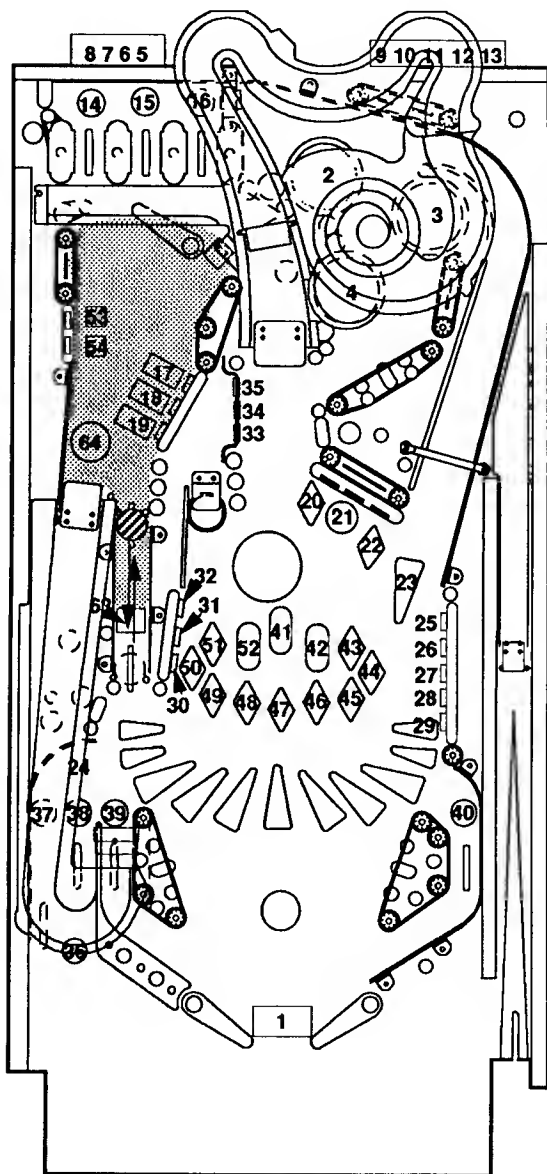
# Bugs Bunny's Birthday Ball

## Lamp Matrix Table

COLUMN ROW	1 Q66 YEL-BRN 1J7-1	2 Q64 YEL-RED 1J7-2	3 Q63 YEL-ORN 1J7-3	4 Q60 YEL-BLK 1J7-4	5 Q58 YEL-GRN 1J7-5	6 Q56 YEL-BLU 1J7-7	7 Q54 YEL-VIO 1J7-8	8 Q52 YEL-GRY 1J7-9
Q80 RED- 1 BRN 1J6-1	Shoot Again 1	Shooting Spree (50K) 9	Left (L Dr Tgt) 17	T (in TUNES) 25	N (in TUNES) 33	Candle 1 41	Candle 9 49	Backglass CAN.3 57
Q81 RED- 2 BLK 1J6-2	Left Jet Bumper 2	Shooting Spree (100K) 10	Middle (L Dr Tgt) 18	U (in TUNES) 26	E (in TUNES) 34	Candle 2 42	Candle 10 50	Backglass CAN.4 58
Q82 RED- 3 ORN 1J6-3	Right Jet Bumper 3	Shooting Spree (200K) 11	Right (L Dr Tgt) 19	N (in LOONEY) 27	Y (in LOONEY) 35	Candle 3 43	Candle 11 51	Backglass PLAYER1 59
Q83 RED- 4 VEL 1J6-5	Bottom Jet Bumper 4	Shooting Spree (500K) 12	Left (R Dr Tgt) 20	E (in LOONEY) 28	PORKY PG 36	Candle 4 44	Candle 12 52	Backglass PLAYER 2 60
Q84 RED- 5 GRN 1J6-6	10K Skill Shot 5	Shooting Spree (Ex. Ball) 13	Middle (R Dr Tgt) 21	S (in TUNES) 29	Left Outlane 37	Candle 5 45	Left Top 53	Backglass PLAYER 3 61
Q85 RED- 6 BLU 1J6-7	50K Skill Shot 6	Top Lane Left 14	Right (R Dr Tgt) 22	L (in LOONEY) 30	Middle Outlane 38	Candle 6 46	Left Bottom 54	Backglass PLAYER 4 62
Q86 RED- 7 VIO 1J6-8	100K Skill Shot 7	Top Lane Middle 15	Spinner 23	O (in LOONEY) 31	L Return Lane 39	Candle 7 47	Backglass CAN.1 55	Captive Ball 63
Q87 RED- 8 GRY 1J6-9	500K Skill Shot 8	Top Lane Right 16	Kick Back 24	O (in LOONEY) 32	R Return Lane 40	Candle 8 48	Backglass CAN.2 56	Cake 64



# **Bugs Bunny's Birthday Ball** **Playfield Lamp Locations**



# Bugs Bunny's Birthday Ball

## Switch Matrix Table

COLUMN ROW	1 Q45 GRN-BRN 1J8-1	2 Q49 GRN-RED 1J8-2	3 Q44 GRN-ORN 1J8-3	4 Q48 GRN-YEL 1J8-4	5 Q43 GRN-BLK 1J8-5	6 Q47 GRN-BLU 1J8-7	7 Q42 GRN-VIO 1J8-9	8 Q46 GRN-GRY 1J8-9
1 WHT- BRN 1J10-9	Plumb Bob Tilt 1		Standup (Skill) 17	L (in LOONEY) 25	N (in TUNES) 33	Tazz Ramp Entry 41	Top Sling 49	Lane Change (R Flipper) 57
2 WHT- RED 1J10-8		Outhole 10	Top Launch 18	O (in LOONEY) 26	E (in TUNES) 34	Tazz Ramp Score 42	Top Right 10 pt 50	Lane Change (L Flipper) 58
3 WHT- ORN 1J10-7	Game Start 3	Ball Trough #1 (right) 11	Standup (by Dr Tgt) 19	O (in LOONEY) 27	S (in TUNES) 35		Left Outlane 51	
4 WHT- YEL 1J10-6	Right Coin Chute 4	Ball Trough #2 (left) 12	Right (R 3-Bk Dr Tgt) 20	N (in LOONEY) 28	Top Lane Left 36	Top (Mini Left) 44	Left Jet Bumper 52	Right (L 3-Bk Dr Tgt) 60
5 WHT- GRN 1J10-5	Center Coin Chute 5		Middle (R 3-Bk Dr Tgt) 21	E (in LOONEY) 29	Top Lane Middle 37	Bottom (Mini Left) 45	Right Jet Bumper 53	Middle (L 3-Bk Dr Tgt) 61
6 WHT- BLU 1J10-3	Left Coin Chute 6	Shooter Lane 14	Left (R 3-Bk Dr Tgt) 22	Y (in LOONEY) 30	Top Lane Right 38	Right Outlane 48	Lower Jet Bumper 54	Left (L 3-Bk Dr Tgt) 62
7 WHT- VIO 1J10-2	Slam Tilt 7	L Ramp 15	Spinner 23	T (in TUNES) 31	Optv Ball Top 39	L Return Lane 47	BL Kicker ("sling") 55	
8 WHT- GRY 1J10-1	High Score Reset 8	Eject Hole 16	Standup (by "L") 24	U (in TUNES) 32	Optv Ball Bottom 40	R Return Lane 48	BR Kicker ("sling") 56	
								64

# **Bugs Bunny's Birthday Ball** **Playfield Switch Locations**

